Special Issue

New Progress in Photonic Neural Networks

Message from the Guest Editors

Recently, the resurgence of interest in Deep Neural Networks (DNNs) and Artificial Intelligence (AI) has triggered a new era of compute-demanding applications. With current projections forecasting that the computational power requirements will double every 4–6 months, in conjunction with the fact that Moore's law is slowing down, new technologies and special-purpose hardware accelerators need to be developed in order to sustain the massive compute growth. Photonic computing is a promising candidate to catalyze and become the computing hardware solution, since it inherently provides all the exceptional primitives of light: high-bandwidth, low-power and low-latency. Building upon these benefits, many demonstrations have been published over the last few years, showing significant progress on Photonic Neural Networks (PNNs). We encourage you to submit your work in this Special Issue: Photonic neuromorphic computing; Photonic architectures for accelerating matrix-vector multiplication operations; Optical/electro-optical components for implementing non-linear activation functions; Application challenges and opportunities of photonic neural networks.

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You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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